

# APPENDIX

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s) : Theophil Markus LUTZ and Christian CHEVRET  
Serial No. : 10/552,222  
For : PRODUCT FOR TREATING REINFORCED CONCRETE  
CONSTRUCTIONS  
Filed : September 25, 2006  
Examiner : Green, Anthony J.  
Art Unit : 1793  
Confirmation No. : 6514

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. §1.132**

We, Theophil Markus LUTZ and Christian CHEVRET, hereby declare that:

1. We are the named inventors in the above-captioned application and that we have read and are familiar with the application, and the Final Office Action issued on December 19, 2008 (hereinafter merely "the Final Action").
2. Attached is our Curriculum vita. In view of our education, training and experience, we consider ourselves qualified to express the statements and opinions herein.
3. The experiments were performed under our direction, supervision or control.
4. We are making this Declaration in response to the comment raised in the Final Action, especially as it relates to the rejection of the claims 14-16 and 18-27 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Publication No. 2005/0258401 to

Lane et al. (hereinafter merely "Lane"), and as allegedly being unpatentable over Lane in view of U.S. Patent No. 4,098,614 to Ray (hereinafter merely "Ray").

5. We believe that the claimed invention is unobvious and patentable over Lane and Ray, considered either alone or in combination for the reasons explained herein.
6. Applicants respectfully submit that the specification of the present patent application states at page 3, lines 20-21 that Li glycerophosphate has a much greater penetrability into concrete than Na glycerophosphate. In support of this the following experimental results shows this.
  - i) Applicants made a cylindrical piece of concrete of 8 cm diameter and of 15 cm length. This piece was cut into two equal halfpieces along its longitudinal axis. The respective front surfaces of said halfpieces were first wetted with water and thereafter aqueous 0.1 molar solutions of respectively Li glycerophosphate and Na glycerophosphate were applied onto said front surfaces every two hours.
  - ii) The concentrations of Li glycerophosphate in one halfpiece and the concentration of Na glycerophosphate in the other halfpiece were measured after 24 hours at various depths in the concrete. The results are shown hereinafter, the depths being expressed in millimeters and the concentrations of the Li and Na glycerophosphates (GP) being expressed in per cent versus weight of concrete.

Depth	LiGP	NaGP
5	0.811	0.958
10	0.643	0.834
20	0.533	0.417
30	0.201	0.055
40	0.080	<u>0.013</u>
50	0.019	0.001
60	<u>0.009</u>	0.000
70	0.001	0.000

7. In the above table of results, the lowest substantial measurable concentrations have been underlined : It appears that Na glycerophosphate penetrated to a depth of about 40 mm,

whereas Li glycerophosphate penetrated to a depth of about 60mm, that is to say about 50% deeper.

8. This shows that the Li compound is much more appropriate for penetrating a concrete structure and reaching embedded steel rebars than the Na compound. This result was fully unexpected before the present invention was made by the Applicants and neither disclosed nor suggested in Lane.
9. As to the reference to Ray it indeed teaches the use of various alkaline and alkaline metal glycerophosphates for improving the compressive strength of concrete. Among these, the salts of calcium, magnesium, potassium and sodium are preferred, the calcium salt being particularly preferred (see claims 5 and 7 and column 3, lines 12-18 of the reference). Thus, Ray does not teach the equivalency of the Li and the Na salts, but the equivalency of the magnesium, potassium and sodium salts and the premium ranking position of the calcium salt. In other words, Ray teaches away from the Li salt and pushes those skilled in the art to the use of the calcium salt.
10. Ray also teaches the use of the aforesaid salts for obtaining a short-term effect, namely increasing the compressive strength upon setting whereas the present invention concerns long-term anticorrosion protection. It is by no means obvious to those of ordinary skill in the art to transpose and apply a teaching concerning the short term strength increase effect to a long-term anticorrosion aim.
11. Moreover, the experimental results concerning penetrability show that the Li salt and the Na salt are not equivalent. Neither Lane nor Ray, alone or in combination, suggest anyway the superior penetration ability of the Li glycerophosphate.
12. Also it is respectfully submitted that the metallic materials disclosed at column 4, lines 45+ of Ray are **not steel rebars**: it is only more or less fine or coarse aggregate material (chips, scrap, etc.) having the same function as stone or gravel material.

13. Accordingly it is respectfully submitted that the claimed process is **not the same** as the process disclosed in the prior art references. The penetration capability of the claimed composition is unexpectedly much superior to those of the prior art compositions.
14. We further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true and further, that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

13.3.2009

Date

13.03.2009

Date



Theophil Markus LUTZ



Christian CHEVRET

## **Curriculum vitae. Theophil Markus Lutz**

Born on the 29 June 1950 in Thun (Switzerland) as the youngest son of the five children of Susanne and Lorenz, minister at the protestantic church.

9 years regular school in the city of Bern (Switzerland)

1965. Basic training in analytical and physical chemistry in the telecommunications industry in Bern, Switzerland. (Federal diploma)

University of Bern, Institute of Organic Chemistry. Technical assistant in the thermodynamics research laboratory.

University of Berlin, Germany. Institute of Botany. Assistant in the department of cryptogams and cytology. Chromosome analysis.

Ciba-Geigy. Responsible for quality control in the section of organic chemistry and photochemistry.

Lasag AG. Thun. Switzerland. Research and development laboratory. Head of the laser project in ophthalmology. Glaucoma research.

CSIR Pretoria, South Africa. Institute of Applied Physics, optic division. Head of solid section state laser group.

Swiss Federal Institute of Technology, Lausanne. Department of geology. Head of chemistry laboratory.

1990. Founder and director of the Analytic-Th.Lutz laboratory, Morges, Switzerland.

University of Toulouse, France. Institute of Civil Engineering. Thesis examiner.

City councilor and member of the Finance committee, Morges.

President of the Botanical Society of the Canton of Vaud, Switzerland. (CVB).

Member of board of directors of the Natural Sciences Society, (UVSS) Vaud, Switzerland.

Member of the committee, and treasurer, of Bryolich (Swiss association of bryology and lichenology).

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## CURRICULUM VITAE

Name CHEVRET Christian

Date of birth : 1<sup>st</sup> mach 1953

Town - Country of birth Longueuil - Canada

Actuel function : Concrete repair and building rehabilitation department director in a building firm

Expérience :  
1975 Graduate engineer ETS Geneva ( concrete and structure engineering)  
1976-2009 Building contractor manager ( all kinds of buildings , concrete, steel or masonry )  
Manager of concrete repair pathologies in a builder firm

Concrete repair specialized contractor ; pathologies :  
Carbonatation , chloride salt aggression , sulphate salt aggression , other pathologies.

Inhibitor specialized contractor ( sodium monofluorophate)  
1<sup>st</sup> applicator in the world on a bridge in Geneva in 1993 ;  
method statement for the best application result inventor ( not patented)

Experience of application of inhibitor :  
more than 250'000 m2 concrete treatment with this technology

Concrete repair experimentations on real concrete samples  
with Analytic-Th.Lutz laboratory ( concrete mixing , etc...)